

**NOAA'S R&D HPCS ACQUISITION
SOLICITATION NUMBER DG1330-05-RP-1038
QUESTIONS AND ANSWERS
AMENDMENT 0004**

Question 35. Page C-11, Section C.5.2.5

The second paragraph states, the data that is generated from the OCCS, and available at both Fairmont, WV, and Gaithersburg, MD, is required to be written to the R&D HSMS that supports workstreams 4-9. Should this be workstreams 4-6, the workstreams associated with NCEP?

If this is supposed to be workstreams 4-9, are these data currently sent from Fairmont or Gaithersburg to FSL to support FSL processing? Will these data be sent by OCCS to FSL during the R&D HPCS contract? Is the R&D HPCS contractor responsible for providing that bandwidth? Are these data redundant with the data required to support processing at FSL that are identified on page C-23, Table V - Data Ingest?

Answer: Q1 - Yes - the correction will be made in amendment #3 to the RFP.

Q2 - See Answer above. FSL receives its data for WS 7-8-9 from several sources. The DSRC has a satellite dish to download GOES data directly. Other data is obtained directly from their sources. ETA and GFS data is received via the NWS telecommunications gateway. Data is received from the AWIPS operational feed.

Q3 - This is not required. See answer to Q2 above

Q4 - Data must be supplied between the OCCS and HSMS and between the HSMS and the system running the pre-production code, typically the operational backup. NOAA will provide transport for all data written from or read to these systems between these systems and the DC MAN. The vendor will be responsible for transport between the HSMS supporting these functions and the DC MAN.

Q5 - Workstreams 4 and 6 require approximately 75% of the data used by workstreams 7-9. See answer (#2) to Q248 for additional information.

Question 87. Section C.10.3.2 provides current archive data holding sizes for each site and Section C.12 provides the list of GFE available at each site. As indicated in Section C.10.3.2.3 Figure 3, data holdings will continue to grow at GFDL, and presumably at other Sites, during the period leading up to the initial system delivery under this contract. Presumably some archive configurations will need to be enhanced to accommodate this growth. Please provide guidance on what assumptions we should make about the size of data holdings and the archive configurations that will exist at each site at the time of initial delivery.

Answer: NCEP: The archive will be enhanced under another contract. The R&D HPCS can anticipate a 2.5PB archive (2 silos) in Gaithersburg and a 1.25PB archive (1 silo) in Fairmont. Data retention is described in Q&A #43.

GFDL: The archive will be enhanced under the current contract. At the end of the current contract, GFDL expects 5 full StorageTek Silos with a combination of 9840, 9940, and Titanium transports and media. It is anticipated that the total capacity will be slightly greater than 7PB.

FSL: The number of LTO tapes is around 3300. FSL makes two copies of each tape for reliability and disaster recovery. This leaves around 165+ TBytes of uncompressed storage (compression is around 20%). The AML/J robot has 1880 slots leaving room for 188+ TBytes of uncompressed storage. FSL expects this storage to be nearly completely utilized by the end of FY06.

Question 118. Section C.8.4 Configuration and Change Management Plan states that, THE GOVERNMENT DESIRES THAT THE CONTROL BOARD AND CONFIGURATION MANAGEMENT PROCESS INTEGRATE INTO EXISTING GOVERNMENT CONTROL BOARDS AND PROCESSES WHERE APPLICABLE. Please provide examples of processes, procedures, and Control Board and Configuration Management functions currently performed at each R&D laboratory today.

Answer: Answer to follow

Question 125. In Section C.11.4.1, for the Princeton site, the Government expresses some doubt as to the ability to operate all the Chillers concurrently without modifying the flow sensitivity controls. It also mentions a potential redesign of the chilled water plumbing and/or controls and states that until this situation is resolved, operation appears to be limited to chillers #3 and #4 for heating loads requiring more than one chiller. Would the Government please clarify exactly how much chiller capability will be available to the Contractor at the time of initial installation? Furthermore, would the government please clarify who will be responsible for the redesign of the chilled water plumbing and/or controls and the associated cost of that redesign and implementation? Additionally, does the Government have a minimum set of standards relative to the design and build-out for any increased chiller plant capacity and what is the Governments minimum requirement for backup capacity? Does the Government have any NOAA-wide standard required to Backup and Recovery standards as relates to Power and Cooling and generator capacity? Should the Contractor propose an alternative Contractor-provided facility does some set of minimum standards regarding Section 11 capabilities exist?

Answer: (1.) Revised numbers (which include the mid-contract system upgrade in April 2005) for projected HPC system power usage in the current Raytheon contract are: 400 kVA in 10/04, 580 kVA in 10/05, and 0 kVA in 10/06. Therefore, the available power and cooling are as follows:

Available Power (kVA): 250 in 10/04, 70 in 10/05, 650 in 10/06

Available Cooling (tons): 170 in 10/04, 108 in 10/05, 307 in 10/06

These revised numbers, together with relevant assumptions, are provided in Amendment 4.

(2.) Princeton facility support personnel have recently run tests to see whether chiller combinations other than #3 and #4 can be made to operate together. They were able to get chillers #1 and #4 to operate together for a half-hour test. However, the combination of chillers #1 and #3 still was not successful.

As indicated in Amendment 2, the Government is tasking an engineer to evaluate the current chiller configuration to determine what can be done to allow any two chillers to operate together. He is still in the process of completing his analysis, but he believes that the likely solution will be to install a 12-inch pipe in a loop configuration that connects all three chillers, with feeder lines drawing chilled water off of the loop as required. Over the next month, the engineer will complete his analysis, including developing a schematic of his proposed solution. These findings, when known, will be shared with Offerors.

It is the Government's intent to resolve this problem in FY 2006 to provide N+1 redundancy using funds outside of the R&D contract. Because these facility modifications will occur after contract award, the Government intends to negotiate with the winning Contractor to coordinate these changes with those required by the new Contractor.

(3.) The Government requires N+1 redundancy for the Princeton chilled water plant. The Government does not require generator backup capability for the R&D HPCS.

(4.) The Government does not have any NOAA-wide standards for backup and recovery as relates to power and cooling for research and development computer facilities.

(5.) Since the Offeror provides the facility, the Offeror is responsible to provide sufficient resources and facility reliability to meet the Government's requirements for system availability

Question 150. Section E.2.3.2 Disk I/O Performance, specifies that "When possible, all performance specifications indicated in the contractor's proposal will be verified. Any failures to meet the specifications shall be remedied or result in failure of the acceptance test." There are no disk performance benchmarks provided as part of this RFP. Will the disk I/O performance be measured solely against the vendor's provided specifications? Should this section of the RFP be modified or removed?

Answer: Yes, vendors specifications will be tested and verified in accordance with E.2.3.2. This section will remain in the RFP.

The Government will devise whatever tests it deems necessary to verify proposed performance specifications. In the past tools such as 'dd' have been used to verify performance of disk hardware.

While there are no specific disk I/O benchmarks, the Government expects the vendor to supply adequate I/O performance for each subsystem.

Question 163. In section C.5.2.6.1 the Government provides data generation rates for workstreams 1 through 3 (1.4 TB/day, 2.6 TB/day, and 1 TB/day, respectively) for a baseline

level of performance for these workstreams. Do these data generation rates correspond to the current Origin LSC baseline or to the Altix LSC baseline to be installed in April 2005?

If these data generation rates correspond to the Origin baseline, for the purpose of projecting data generation into the future, should we assume that the Origin baseline has a relative performance level of 1.0, and the Altix baseline has a relative performance level of 1.8, as stated in appendix A (C.10.1.3, page 40)? Such an assumption is necessary because the Government did not provide throughput benchmarks (section J.1.4.2.4) for the Origin baseline and therefore our performance baseline comparisons can only be made to the Altix baseline.

If this assumption is correct, then the data generation rates expected from the Altix system beginning in April 2005 would be 1.5 (1.8 raised to the 0.7 power) times the values stated above, or 2.1 TB/day, 3.9 TB/day, and 1.5 TB/day respectively -- correct?

Answer: Answer to follow

Question 170. When will the 7052 sq ft of floor space in Princeton be available? Who will be responsible to remove existing SGI equipment? Will the selected vendor have access to the facility prior to removal of the SGI equipment to perform any facilities upgrades necessary to support the new hardware platform?

Answer: Please see the GFE section and Figure 3a for more details on Government-owned equipment, including GFE. Please also see RFP Question 257, 258, and 359 for more information about the leased components of the HPCS in Princeton that will be removed. All early access to the Princeton facility should be identified in the Transition Plan. The Government will work with the Contractor to minimize the impact to the current contract while trying to best support the future contract.

Question 176. Describe the access route for moving equipment from the loading dock to BLDR-2.

Answer: Information provided in Section C.11.2.1 applies with the following exceptions:

- 1) The doorframes leading to BLDR-2 have been raised in the design to a height of 96". Therefore, the low point in the pathway from the loading dock to BLDR-2 will be 96".
- 2) There are two doorframes in the path to BLDR-1 that are actually only 83" at their low point.
- 3) The pathway to both BLDR-1 and BLDR-2 has a maximum width measurement of 58" wide. Equipment or pallets wider than that will need to be broken down into smaller units.

Question 179. What are the issues that will need to be addressed in order to install an additional chiller in the chiller room (Boulder)?

Answer: The primary issues involved are cost and timing delays. The chiller room is located internal to the building, in the basement, below ground level. Installation costs are high for this type of installation. All of the work will need to be contracted by GSA, and appropriate feasibility studies and compatibility evaluations will need to be performed. From the time

where the finances are available, to completion of the project, would be on the order of 10 months. Cooling for the BLDR-1 and BLDR-2 sites is provided in accordance with the RFP. Note that monies for installing an additional chiller would have to be deducted from the contract amount and redirected to GSA

Question 186. How many engineers does the current HPC vendor in Boulder have on-site? Does the current HPC vendor have any other support personnel for the current system?

Answer: There are two engineers on site. One is solely responsible for system software issues. The second is responsible for hardware support and software issues. Both engage in some user support (although FSL has a GFE user support organization composed of 3 software engineers). In addition, the incumbent has a project manager who is on-site between 25% and 50% of the time.

Question 190. Describe the process by which a vendor will implement any facility build-outs that he/she requires. Who will pay for these build-outs and how will payments be made? Can the Government provide guidance on the estimated time (in weeks or months) required to complete build-outs of different degrees of complexity?

Answer: Q1: The vendor will submit their build-out/modification requirements to GSA. GSA will respond with an estimated cost. Once funding is secured via contract deduction, GSA will proceed with obtaining industry quotes. An award is made based upon standard contracting practice, and the build-out/modification begins.

Q2: Any costs incurred by a buildout will be deducted from the contract funding in the form of a hold-back in the fiscal year during which the construction is to be initiated. This funding will be transferred within the Government to GSA who will manage the construction contract.

Q3: See section C.5.6.1 in Amendment 2 regarding time estimates for modifications to any Boulder facilities

Question 191. What is the cost of a fiber connection from the MDF to BLDR-2?

Answer: Up to 8 strands of singlemode fiber and up to 16 strands multimode fiber will be available to the Contractor at no cost. Additional fiber, up to the installed amounts that are shared with other laboratory interests, can be available at low cost. Fiber requirements over the installed amount would need to meet building standard configuration and would cost a minimum of \$20K.

Question 192. What LAN connections are available in BLDR-1? 100Mbps? Gigabit?

Answer: The Boulder facilities (BLDR-1 and BLDR-2) will have 100Mbps and Gigabit available.

Question 193. When the labs are combined into ESRL, will there be a change in lab/production status?

Answer: The R & D HPCS will be a NOAA-wide resource. GFDL, NCEP, and FSL (transitioning to ESRL) will be available to provide infrastructure support. The intended

utilization with respect to each workstream is not expected to change with the pending reorganization in Boulder.

Question 195. What mix of vendor engineers are on-site?

Answer: See question 186.

Question 196. Is the NLR connection to be for BLDR-1 and BLDR-2?

Answer: Either or both as the contract requires. The plan is to have NLR access at DSRC and available to all primary computer facilities.

Question 197. How long must the newly upgraded equipment in BLDR-1 coexist with any new equipment (installed under this new contract)?

Answer: In accordance with Section L.6, Tab 9.4, offerors are required to provide a transition plan for the equipment in BLDR-1. The equipment in BLDR-1 will no longer be under maintenance by the incumbent as of 10/2006. The new Contractor may choose to maintain the existing equipment to provide additional SLT or transition to new equipment in any way they see as most advantageous to the Government.

Question 201. Will GSA conduct design and construction management/bidding for the Vendor's upgrades (under this contract)? If so, will the Vendor be a part of the plan review/approval process and the evaluation of construction bids?

Answer: GSA will conduct design and construction management for any infrastructure upgrades to the BLDR-1 and BLDR-2 sites under this contract. The vendor will submit requirements and GSA, working closely with NOAA representatives, will perform plan review, approval and award of construction bids in accordance with standard contracting guidelines. The Government will present contractor plans to the vendor and will solicit input from the vendor regarding those plans.

Question 206. Have the 13 four-ton XDO systems been de-rated for altitude?

Answer: The number of XDOs has been increased to 17. The 4-ton per unit rating has not been derated.

Question 210. (Boulder facility) Will the mechanical, electrical, and network drawings be made available?

Answer: All of the available mechanical and electrical drawings have been made available to potential bidders. If there are requirements for upgrading the facility, potential bidders should present those requirements to the Government. Additional network information will be made available in a future amendment to the RFP. The current drawing package is available by following the instructions stated on the RDHPCS web site under the "Site Visit and Facility Drawings" link.

Question 211. (Boulder facility) If upgrades to power and cooling are required, where will they be located?

Answer: Any additional CRACs or UPSs will have to reside in BLDR-1 or BLDR-2. There is space for one additional chiller in the chiller room in the DSRC. There is space for one additional cooling tower adjacent to the existing 3 cooling towers outside DSRC. There is space for more switchgear in the electrical room in DSRC. Power distribution panels would have to reside in BLDR-1 or BLDR-2. Transformers would have to reside in BLDR-1 or the transformer room adjacent to BLDR-2.

Question 216. For sub-floor branch circuit conduit in BLDR-1, can computer grade blue flex conduit (Ultratight) which terminates on the circuit breaker panel enclosure be utilized (rather than the current arrangement of Greenfield terminating in a j-box)?

Answer: Answer to follow

Question 245. 1. We interpret the answer to question 166 to say that if a single resource is proposed to meet the needs of (for example) WS1, 2, and 3 that for the purpose of both the SLT calculation and the Throughput Benchmark the combined resource *must* be proportioned according to the funding profile in C.4.3 Table 1 - that is exactly 4/14ths of the resource for WS1, 6/14ths for WS2, and 4/14ths for WS3. Is this correct?

If it is correct may we assume that the resource can be divided either spatially or temporally for the SLT calculation (e.g. WS1 uses 4/14ths of the resource for all of the year or all of the resource for 4/14ths of the year)?

2. Now suppose that a workstream (e.g. WS1) runs so well that 16 instances run in the same time as the required 8 instances for the Throughput Benchmark when constrained to using the 4/14ths of the combined resource. And suppose further that applying the unused part of that 4/14ths of the resource from WS1 to the 6/14ths of the resource intended for WS2 allows WS2 to run twice as fast, thereby resulting in a significant decrease in the total of the Throughput benchmark for WS1, 2 and 3 combined.

Are we to understand from the answer to question 166 that the government requires the combined resource to be proportioned as the ratio of funding streams even if the combined Throughput Benchmarks on the combined resource run faster if the resource is proportioned on a performance ratio rather than a funding ratio?

If this is not the intent, may the offerer proportion the machine in such a way so as to minimize the combined Throughput Benchmarks of 1, 2, and 3 rather than by the financial ratio in C 4.2 Table 1?

3. Must the Throughput Benchmark used in the SLT calculation (C.6.1.2) be run in exactly the same manner as reported for the Throughput Benchmark (J.1.4.2) result, or for example may the SLT calculation be done assuming multiple instances of Throughput Benchmarks are run simultaneously (thus potentially yielding a higher SLT result)?

4. Which result will be weighted higher in evaluating an offering - the Throughput Benchmark or the SLT number - and in what ratio?

Answer: Answer to follow.

Question 247. Amendment 2 changed paragraph C.5.2.4 to allow the HSMS nearline tier to be either disk or tape. The HSMS benchmark instructions at J.1.4.4.1 still specifically refer to locating all files on tape. Will the HSMS benchmark change to reflect the possibility of using disk as a portion of the near-line tier?

Answer: Answer to follow.

Question 251. Amendment 2, C.11 and the recent answer to Question 112 indicate that the FSL subsystem HSMS configuration is being maintained by the current vendor for the first year of the new contract (i.e., through 9/6/2006). Please provide answers to the following questions:

a. Does the Government intend to continue to add data to the AML/J during FY 2006? If so, please provide an estimate of the data volume that will be stored in the AML/J on 9/6/2006. If not, please provide an estimate of the data volume that will be stored in the AML/J on 10/01/05.

b. During FY2006, does the Government intend to operate both the legacy and new LSC elements in parallel?

c. Assuming the contractor proposes a new HSMS solution for the FSL subsystem, please clarify whether or not the contractor has any requirement to provide access from the legacy LSC to the new HSMS during FY2006.

d. Assuming the contractor proposes a new HSMS solution for the FSL subsystem, please clarify whether or not the contractor has any requirement to provide access from the new LSC to the AML/J during FY2006.

e. Assuming that a contractor proposes to migrate data from the AML/J archive to a new HSMS solution, when can that migration begin (at the beginning of the new contract, or when the AML/J is available as GFE at the end of FY2006)?

f. Per Table V, section C.5.4.3 of the RFP (High bandwidth connectivity to model and observation data), the FSL workstreams require access to approximately 1 TB/day of model and observation data. If the Government intends to operate both the legacy and new LSC elements in parallel in FY2006, does it intend to provide separate feeds of these model and observation data to the two systems?

Answer: Answer to follow.

Question 252. In the answer to question 112, the government stated that the PRTN site will have installed a total of slightly more than 7PB of data in 5 StorageTek silos using 9840, 9940 and Titanium media. Are all 5 of the StorageTek silos, tape drives and media to be

provided as GFE with regards to the RDHPCS acquisition. Also, can the government please provide us with the number of Titanium drives, and the number of Titanium media that will be in place at that time.

Answer: Answer to follow.

Question 253. When will the Goddard facilities be available for use under the contract?

Answer: Please see the answer to question (1) under Site Question # 352.

Question 254. When and how will diagrams of the Goddard space be made available? How much raised floor space will be available, and how is it configured? How much non-raised-floor space will be available, and how is it configured?

Answer: Answer to follow.

Question 255. If build-out of additional resources is required, what is the process for funding this, how will it be executed, and what is the lead time required for its completion?

Answer: This question duplicates Site Question # 339.

Question 257. When does current GFDL Contract with the incumbent Integrator expire? At the contract expiration date, will GFDL maintain title to the SGI Altix systems or does the current Contractor retain title to the equipment?

Answer: The current GFDL contract will expire on September 30, 2006. The Altix equipment is being leased and will be returned at the conclusion of the lease term. Please see section C.12 (Appendix C) for the equipment available to offerers. For additional equipment desired that is not part of GFE, please contact the incumbent or the hardware vendor.

Question 258. In developing the most cost effective solution and planning for a mid-life upgrade to the initial system delivery to GFDL, it is important for the bidders to understand the approximate disposition date for the SGI Altix hardware installed under the current contract. This information is necessary as bidders plan for the installation of the mid-life upgrade, given the current facilities environment at GFDL. Please provide the bidders with the anticipated removal date(s) for the SGI systems installed under the current contract.

Answer: The GFE portions of the Altix and Origin systems are listed in the RFP. Outside of the GFE, the Altix and Origin systems are a leased component of the current HPCS and will be removed as of October 2006.

Question 259. Will the existing Government and Contractor staff (under NASA contracts) at the Goddard facility be available to provide any support to the R&D HPCS systems housed there "operational monitoring, systems administration, system maintenance, or other?"

Answer: No. Question is duplicated in 240

Question 260. RE: Goddard Facility -

- 1) Who is the point of contact for questions concerning NISN?
- 2) How much GFE network bandwidth is NISN providing to support R&D HPCS data flows to and from
 - a) the MAX, b) Abilene, and c) the facility in Fairmont, WV?

Answer: See answers to question # 338.

Question 261. RE: Goddard Facility -

- 1) How much cooling will be available from existing air handlers at the time of occupancy?
- 2) Above and beyond the cooling available from existing air handlers, how much cooling is available from the existing infrastructure to support additional air handlers (how much additional chiller capacity is there)?

Answer: Answer to follow.

Question 262. RE: Goddard Facility -

- 1) Will the Offeror be responsible for the cost of electricity consumed by systems housed at Goddard? If so, how will this be calculated, and what is the current rate being paid for electricity by the facility?
- 2) How much power will be available at the time of occupancy from existing PDUs? How many receptacles (and what types) are available on existing PDUs?
- 3) Above and beyond power available from existing PDUs, how much power is available from the existing infrastructure to support additional PDUs?
- 4) How much UPS power will be available at the time of occupancy?
- 5) How much back-up generator power will be available at the time of occupancy?

Answer: Answer to follow.

Question 264. RE: PRTN Power - (1) What is the voltage of the feed off of Route 1? (2) What is the size of the generator that was part of the infrastructure tour? (3) How reliable is power off of Route 1?

Answer: Answer to follow.

Questions 267, 268, and 269. RE: Clarification Requested for Storage and Media at GFDL Site - There appear to be significant discrepancies in relation to the amount of storage that is to be installed, and available as GFE during the delivery schedule of the R & D systems. For instance, section C.11 Appendix C, Government Furnished Equipment (GFE) lists the Princeton site as having 4 StorageTek Powderhorn installed, and a total of 15,000 tape

cartridges. Assuming that each of the SILOs can hold approximately 5500 cartridges, is it to be assumed that there are 7,000 slots that are currently empty. The answer to question 112 implies that a fifth SILO is being installed, and that a total of 7PBs of data will reside in storage at the Princeton site at the start of FY 2007 that needs to be retained for the nine year life of the R & D contract. Why would a fifth silo be required, if it currently has 7,000 empty cartridge slots. Could the Government provide an accounting of total media by type, total number of tape drives by type, total number of slots in robotic tape systems, and total number of free slots anticipated to be in place at the start of FY 2007.

Answer: Answer to follow.

Questions 270, 271, and 272. Clarification of Data Generation Rates for Archiving –

a) Section C.5.2.6 provides a data generation profile for WS1 - WS3 of 5 TBs per day. The governments answer to question 36 expresses that over 10 TBs of data are written to its current tape archive system. What additional data is being written today that is not included in the data generation amount provided in section C.5.2.6. Is this additional data stream going to go away before the start of FY 2007, or is this data rate a new requirement that has not previously been accounted for in the RFP?

b) If this is a new storage requirement, does the additional amount of data generated scale using the same equations as outlined under Section C.5.2.6?

c) Are there any other data storage requirements that have not previously been outlined in the RFP that need to be taken into account by vendors responding to the NOAA R & D RFP?

Answer: a) WS1-3's aggregate data generation has been profiled to be 5TB/day of new data written. However, data is continuously read from tapes and migrated to the disk cache. The data may be manipulated which may invalidate the tape-resident copy. The data will then need to be "re-migrated" (written) back to tape. This does not represent new data being generated by the representative workstreams. This is simply use of the data already generated.

b) n/a.

c) The Government has made every attempt to represent its data storage requirements within the RFP.

Question 273. RE: Clarification of Nearline Storage Needs - Amendment 2 changed Section C.5.2.4 to allow the HSMS near-line tier to be either disk or tape. Paragraph 9, sentence number two stated: -The Government desires that files that haven't been accessed in one year will be migrated from the nearline storage to the offline storage-. This statement implies that the nearline storage system is required to be sized such that all data generated within a rolling one year period is to be stored in nearline storage. If the nearline storage being proposed is disk, then using the baseline data generation profiled in section C.5.2.6 of 5 TBs of data generated per day would lead to the requirement that starting in FY 2007 the nearline storage (as stored on disk) would need to be a minimum of 1.825 PBs, and would need to grow according to the data generation growth equations provided in Section C.5.2.6. Is this assumption correct?

Answer: No. This is simply an additional migration policy to migrate all files that have not been accessed in one year to the offline tier. The Government does not believe that the nearline storage will only consist of files that have not been accessed for one year.

Question 276. RE: PRTN UPS Issues - (1) What is the ride-through capability for the UPSs for the current systems? (2) What about the shelving currently located in the UPS Room in the north corner of the Computer Room?

Answer: Answer to follow.

Question 283. PRTN LAN Connectivity - What LAN connectivity is available for additional processors - 100 Mbps port? Gigabit ports?

Answer: Answer to follow.

Question 295. PRTN NLR Connection / High-Speed Network Access - (a.) Will a National Lambda Rail (NLR) connection be available? When? Will it terminate in the Computer Room? (b.) Is any other high-speed network available in the area? What is the approximate distance from the GFDL site?

Answer: Answer to follow.

Question 298. PRTN Equipment DeInstalled After FY2006 - On the April 2005 layout, please note the Raytheon equipment that will be de-installed at the end of FY2006.

Answer: Answer to follow.

Question 301. GRBLT Attendee List - Will you provide a copy of the list of those attending the Greenbelt site visit?

Answer: No, the Government will not provide such a list.

Question 302. GRBLT LAN Testing - Will NOAA require evaluation equipment for testing purposes (with regard to local area network switching)?

Answer: No

Question 303. GRBLT GFE List - Please provide a comprehensive list of GFE equipment, including the six (6) Liebert air handlers.

Answer: Answer to follow.

Question 304. GRBLT Infrastructure Costs - Please provide exact cost/charges that vendors will be responsible for relative to power, cooling, floor-space, HVAC, and networking (WAN).

Answer: Answer to follow.

Question 305. GRBLT Space - Is the vendor responsible for square footage cost at the government-provided NASA facility? If so, what fraction?

Answer: Answer to follow.

Question 306. GRBLT Security - What are the specific requirements regarding security, both physical and IT, at the government-provided NASA facility? Are these the same as in the RFP as it exists now?

Answer: Answer to follow.

Question 307. GRBLT Power and Costs - What is the available power? Will power costs be the responsibility of the Offeror to pay and, if so, how would these be paid in the contract?

Answer: Answer to follow.

Question 309. GRBLT Fire Suppression - What type of fire suppression systems are/will be available in the facility?

Answer: Answer to follow.

Question 310. GRBLT Chiller, UPS, air handlers - 1.) If chiller, UPS, or air handler upgrades are necessary, approximately where will they be located relative to these rooms? Is there a plant or equipment area that is available for such installations by the Offeror?

2.) Is a UPS provided as GFE? Where can UPS batteries be located relative the available space? Should this be located separate from the available space?

Answer: Answer to follow.

Question 312. GRBLT Chilled Water Available - How will chilled water be provided to the provided space? If the provided chilled water is insufficient to support the equipment in the offered space, where would another chiller and cooling tower need to be located?

Answer: Answer to follow.

Question 314. GRBLT Equipment Height Limitations - 1.) Is the 7-foot limitation detailed in C.11.1.8 of the handout a firm limitation? Other equipment installed in this building currently exceeds this height. Note that some equipment that might be planned for installation into this space might be 93 inches in height, thereby requiring 7 inches more in height above the indicated limitation of 7 feet. 2.) Would it be possible to provide some portion of the planned raised floor remodeling that could be modified (i.e., not raised) so as to accommodate this?

Answer: Answer to follow.

Question 315. GRBLT Space for new UPS - Where would space be made available for the new UPS and batteries?

Answer: No additional space will be made available.

Question 319. GRBLT Peak power demand - What is the peak demand for this building?

Answer: Answer to follow.

Question 320. GRBLT Redundancy requirements - 1.) Are infrastructure systems required to be redundant, i.e. N+1? 2.) If the provided space is not required to maintain N+1 redundancy, would this impact any other parts of the building in which N+1 infrastructure support is required?

Answer: 1) No.
2) No.

Question 323. GRBLT Additional Cooling Capacity - If additional cooling is required, will there be an available area in which to install air-cooled condensers?

Answer: There is no additional space available. All equipment must be installed in the offered space.

Question 324. GRBLT GFE Lieberts - Where are the six (6) Lieberts (mentioned in the hand-out) located? Are they currently serving the space that is available to NOAA?

Answer: The six Liebert CRAC units are GFE and will be available to the selected Offeror for the offered space.

Question 328. GRBLT Floor Load - Will the load capacity of the raised floor be upgraded when the floor is raised from 18" to 24"?

Answer: Answer to follow.

Question 329. GRBLT Site Prep Responsibility - Who is responsible for site preparation, the Government or the Contractor?

Answer: Answer to follow.

Question 331. GRBLT HVAC units - Please describe the six (6) HVAC units available for computers and their locations.

Answer: Answer to follow.

Question 332. GRBLT Facility Availability - When will the Goddard facilities be available for use under the contract?

Answer: Answer to follow.

Question 333. GRBLT Floor Space Availability - 1.) When and how will diagrams of the Goddard space be made available? 2.) How much raised floor space will be available, and how will it be configured? 3.) How much non-raised floor space will be available, and how will it be configured?

Answer: Answer to follow.

Question 334. GRBLT Power Cost - Will the Offeror be responsible for the cost of electricity consumed by the systems housed at Goddard? If so, how will it be calculated, and what is the current rate being paid for electricity by the facility?

Answer: Answer to follow.

Question 335. GRBLT Power Consumption - Will the Government provide a spreadsheet containing recent power consumption and expenditures for electric utility bills?

Answer: Answer to follow.

Question 336. GRBLT Power Availability - 1.) How much power will be available at the time of occupancy from existing PDUs? How many receptacles (and what types) are available on existing PDUs? 2.) Above and beyond power available from existing PDUs, how much power is available from the existing infrastructure to support additional PDUs? 3.) How much GFE UPS power will be available at the time of occupancy? 4.) How much backup generator power will be available at the time of occupancy?

Answer: 1.) There is provision for 520 kVa of power. NO PDUS PROVIDED

2.) There are no existing PDU's. The existing load center can support an additional 1200 KVA of load, however power to the proposed room will consist of one 480V, 3 phase 3 wire panel.

3.) None

4.) None - NOT REQUIRED

Question 337. GRBLT Cooling - 1.) How much cooling will be available from existing air handlers at the time of occupancy? 2.) Above and beyond the cooling available from existing air handlers, how much cooling is available from the existing infrastructure to support additional air handlers? 3.) How much chiller capacity is available?

Answer: Answer to follow.

Question 339. GRBLT Build-Out - If build-out of additional resources is required, what is the process for funding this, how will it be executed, and what is the lead time required for its completion?

Answer: Funding for the build out of additional resources will be taken from the contract funds. The contractor will be responsible for the execution of any build out. All plans must be approved by Goddard Facilities Management. The site will be available to the contractor in July 2006.

Question 340. GRBLT Operational Support - Will the existing Government and contractor staff (under NASA contracts) at the Goddard facility be available to provide any support to the RDHPCS systems housed there - operational monitoring, systems administration, system maintenance, or other?

Answer: No

Question 342. GRBLT Floor and Ceiling Heights - 1.) What is the current height of the space below the raised floor? 2.) What is the amount of space above the current ceiling? 3.) How much can the ceiling be raised?

Answer: Answer to follow.

Question 345. GRBLT Floor Space Ambiguities - Floor space calculations: The handout indicates the dimensions of the two rooms to be 40"x75" and 40"x50", giving a total of 5000 sq. ft. of space. The hand-out indicates that 5800 sq. ft. are offered but the Contracting Officer submission indicates that 5500 sq. ft. will be available. Please clarify the amount of raised floor space that will be provided.

Answer: Answer to follow.

Question 346. GRBLT Clear Space Below Raised Floor - Is the space under the raised floor relatively clear of objects (such as wires, plumbing, etc.)?

Answer: It will be at the time it is made available.

Question 349. GRBLT Mailing Address - What is the specific mailing address of the building?

Answer: Building 28
Goddard Space Flight Center
Greenbelt, MD 20771

Question 352. GRBLT Government's Site Prep Plans - 1.) What are the Government's plans for renovating the Goddard facility to prepare it for use under this contract? 2.) Will the Government share its plans with Offerors in the RFP? 3.) Will the Government be open to suggestions on how to prepare the site from Offerors and, if so, how can this be done? 4.) When will the facility be available for occupancy?

Answer: Answer to follow.

Question 353. GRBLT Floor Tile / Ceiling Height Issues - 1.) Will the Government re-use the tiles currently installed in the room? 2.) Will the Government re-use the tiles currently

installed in the room? 3.) Would the Government consider designing the room such that a portion of the room will be able to accommodate equipment higher than 7 feet? [See question above]

Answer: Answer to follow.

Question 354. GRBLT Equipment Delivery Access to Room - 1.) How does the Government recommend that vendors deliver equipment to the building? 2.) Please describe the recommended path that the Contractor should follow to move equipment from the drop-off point outside of the building to the provided room? 3.) What precautions should the Contractor use in moving the equipment along this access path to the provided room?

4.) What is the maximum height (exact) of the door openings along this path? If the Contractor's equipment exceeds this height by a slight amount, are there options available to the Contractor to temporarily modify the door opening so long as the opening is restored to its original condition or better?

Answer: Answer to follow.

Question 359. In the response to question vendor 93, the Government stated in their response (item #2) that, ..The Power, cooling, chiller capacity and floor space that is currently consumed is not a part of this offer. It is assumed that that the Altix systems that will be installed under GFDL's current contract through FY05 will remain on the floor through at least the commencement of the new NOAA R & D contract.

- a) If so, will these systems be available to bidders to run a subset of the NOAA R&D workstreams?
- b) Can a bidder claim credit for any SLT obtained from these systems over the period of time they remain installed at GFDL, if the contractor assumes the support costs associated with these systems?
- c) Is it correct to assume that the cost to support and maintain these systems are provided through some other contract vehicle since they are not listed as GFE?
- d) Can a bidder assume the support costs under the R&D procurement at the end of the current contract period? If yes, what are those costs and what is the current type of contract vehicle?
- e) Might these systems be offered to bidders as GFE in the future?

Answer: The Altix systems at GFDL are currently under contract with Raytheon until October 2006. All GFE systems can be found in C.12 (Appendix C).

a) The current HPCS at GFDL is not available to run a subset of the NOAA R&D workstreams while under its current contract. Offerors may contact the equipment vendor concerning the availability of these machines/equipment at the end of the current contract (which ends on September 30, 2006).

b) An offeror may not claim credit for any SLT obtained from these systems while it's under its current contract. If the Contractor elects to offer these systems to the Government after the current contract, they will count towards SLT. Again, please contact Raytheon/SGI about the availability of these systems.

- c) Support and maintenance of the current HPCS at GFDL is currently handled through the existing Raytheon contract. This contract ends by October 2006.
- d) The majority of the current HPCS at GFDL is leased. For any GFE that will remain please contact the appropriate vendor.
- e) The Government will advise offers of any changes or additional equipment available for GFE.

Question 363. The answer to RFP Q&A question 112 states, AT THE PRINCETON SITE, AS MENTIONED IN QUESTION 87, IT IS ANTICIPATED THAT BY THE START OF FY2007 THERE WILL BE SLIGHTLY MORE THEN 7PB OF DATA IN 5 STORAGE TEK SILOS USING 9840, 9940 AND TITANIUM MEDIA. ALL OF THIS DATA WILL NEED TO BE RETAINED FOR AT LEAST NINE YEARS. How many STK Titanium drives are being procured, and will these be GFE'd?

Answer: Answer to follow.

Question 364. What is the basis for the construction of the throughput baseline for workstreams 1, 2 and 3?

Answer: The goal of the benchmark throughput baseline is to characterize not only the workload supporting NOAA research, but to give a measure of the total computing resource available as well. Additionally, it must be remembered that the models supplied with each of the workstreams are but surrogates for the larger work load supporting NOAA research activities.

The utilization of core computing resources supporting workstreams 1, 2 and 3 averages around 85% and frequently and substantially exceeds 90%.

Regarding the specific distribution of node sizes within the Princeton configuration, it must be remembered that current configuration choices are not related to future systems or to the goals of RFP.

Finally, it must be remembered that the 3 benchmark models chosen as surrogates for the workstream 1, 2 and 3 computational requirements have specific PE configurations in which they can run. Further, it must be understood that as they are surrogates, they are not the complete workload.

Summarizing, the concurrent goals of the benchmark throughput baseline are characterization of the computational resources available as well as computational requirements. These goals are in the context of high resource utilization but limited configurability of workload surrogates. Moreover, current limitations of node configuration are not relevant to future systems.

Thus, the Government has composed the baseline for workstreams 1, 2 and 3 based on the total processor counts available ignoring node boundaries. The Government believes this best

characterizes the resources, the actual workload as a whole and the computational performance requirements as it understands them at this time.

Question 365. Please clarify the maximum power that will be available to the Princeton Complex from the 2.5 MVA substation.

Answer: Answer to follow.

Question 366. The Government has provided preliminary information on the available resources at a NOAA site at the NASA Goddard Space Flight Center. This included preliminary floorspace, power, cooling and connectivity capabilities. At the Goddard site visit, it was indicated to the bidder that additional space and facility capabilities could be made available. Can the Government provide the bidder with information as to what additional floorspace, power (kva), cooling (Tons/BTUs), over and above that previously provided, could be made available?

Answer: Answer to follow.

Question 367. Our team will require time to review and react to pending answers from NOAA. Given the technical nature of many of the unanswered questions and potential impact on our proposal, we request that NOAA grant an extension of 30 days.

Answer: Answer to follow.

Question 368. The following questions relate to the potential use of the Goddard Site

- 1) Is additional square footage available at Goddard above the 5500 sq ft indicated in the 3/18 site visit?
- 2) If so is that space continuous?
- 3) Will the space be fit-up similar to the proposed fit-up of the 5500 sq ft?
- 4) Will additional air handlers above and beyond the five (5) 50 ton units identified in the 3/18 site visit be provided to adequately cool the expanded space?
- 5) Will there be an additional costs for the utilization of additional space?

Answer: Answer to follow.

Question 369. Are table of contents and acronym list desired? If so, will they be excluded from page limitations?

Answer: Answer to follow.

Question 370. This bidder was provided with revised Government facility figures from Section C.11. In Figure 2 , Schematic of Computer Room Layout for BLDR-2 facility, the area enclosed within the dashed line indicates the floor space that will be available for Offeror use in October 2005. The space delineated is approximately 700 square feet. However, Amendment 3, in section C.11.11, indicates that the available space in the BLDR facility in October 2005 as 1424 square feet. Can the Government please clarify this apparent disparity?

Answer: Answer to follow.

Question 371. In reference to data archiving, the Government's response to question 147 stated that Offerors are not required to follow either NCEPs or GFDLs model but instead must meet the terms of this new contract. Either NCEPs or GFDLs model could meet the terms of the new contract. However, in the answer to question 87, the Government stated that FSL makes two copies of each tape for reliability and disaster recovery.

- 1) Does the Government's answer to question 147 (which provides that the vendor can choose either NCEPs or GFDLs model in response to the RFP) only apply to the NCEP and GFDL sites, or does it also pertain to the FSL site?
- 2) If it does not pertain to the FSL site, then is the vendor to follow the guidance provided in the answer to question 87 which states that two copies of each tape to be made for reliability and disaster recovery purposes?

Answer: Answer to follow.

Question 372. The Government's response to question 339, regarding the Goddard site, states that "The site will be available to the contractor in July 2006."

- 1) Given this response, will the bidders be allowed access to the Goddard facility prior to July 06 date to perform any unique fit-up required?
- 2) Alternatively will the bidder be allowed to present its requirements to the NASA construction contractor and that contractor will perform the unique fit-up to coincide with the July 06 date?
- 3) If the alternative methodology is possible, what are the possible means for funding of the fit-up work (would the bidder pay NOAA, NASA, vendor, etc)?

Answer: Answer to follow.

Question 373. Paragraph 2 of section J.1.1 refers to sections J.3.2.2.3 and J.3.2.3.3 but these do not exist in the section J documents that have been posted. Can NOAA please clarify where this information is provided?

Answer: Answer to follow.

Question 374. Regarding the Liebert units at GRBLT: Are the 6 Liebert units currently installed? If so are they fed from the 800amp 480V panel or from some other panel within building? Can we get model numbers and physical locations for the Liebert units?

Answer: Answer to follow.

Question 375. NASA GSFC assesses a "head tax" for each person working on the site. Is the integrator responsible for the head tax, how much is assessed per person, and how is the head tax to be paid?

Answer: Answer to follow.

Question 376. Please clarify the requirements for model reproducibility and the relationship of reproducibility to performance measurement.

Answer: Answer to follow.